

Art Unit: ***

CLAIMPTO

LTO 1/26/2005

AMENDED

I (amended). An isolated nucleic acid molecule selected from the group consisting of:

- (a) an isolated nucleic acid molecule comprising the DNA sequence of SEQ ID [NOs:1-7]NO:4;
- (b) an isolated nucleic acid molecule encoding an amino acid sequence comprising the sequence of SEQ ID [NOs:8-14]NO:11 or amino acids 57 through 309 of SEQ ID NO:11;
- (c) an isolated nucleic acid molecule that hybridizes to either strand of a denatured, double-stranded DNA comprising the nucleic acid sequence of (a) or (b) under conditions of moderate stringency in 50% formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1% SDS, wherein said nucleic acid molecule encodes a polypeptide having kinase activity;
- (d) an isolated nucleic acid molecule [derived by *in vitro* mutagenesis from SEQ ID NOs:1-7]comprising nucleotides 123 through 2015 of SEQ ID NO:4;
- (e) an isolated nucleic acid molecule degenerate from [SEQ ID NOs:1-7]any of (a)
- (d) as a result of the genetic code; and
- (f) an isolated nucleic acid molecule that is at least 80% identical to any of (a)-(e), wherein said nucleic acid molecule encodes a polypeptide having kinase activity.

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2. A recombinant vector that directs the expression of the nucleic acid molecule of claim 1.
3. An isolated polypeptide encoded by the nucleic acid molecule of claim 1.
4. An isolated polypeptide according to claim 3 in non-glycosylated form.
5. Isolated antibodies that bind to a polypeptide of claim 3.
6. Isolated antibodies according to claim 5, wherein the antibodies are monoclonal antibodies.

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7 (amended). A host cell [transfected or transduced with]comprising the vector of claim 2.

8 (amended). A method for the production of a kinase polypeptide comprising culturing a host cell of claim [2]7I under conditions promoting expression,] and recovering [the]said polypeptide from the cell culture[medium].

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9. The method of claim 8, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, insect cells and animal cells.

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10 (amended). An isolated kinase polypeptide comprising an amino acid sequence selected from the group consisting of:

- (a) [amino acids 1-275, 25-275, 140-226, or 149-175 of SEQ ID NO:8;]
 - (b) amino acids 1-302, 8-302, 26-302, 34-295, 60-229, 157-183, or 198-229 of SEQ ID NO:9;]
 - (c) amino acids 1-355, 23-279, 124-221, 134-169, or 183-214 of SEQ ID NO:10;]
 - (d) [amino acids 1-631, 57-309, 129-254, or 175-200, or 215-247] of SEQ ID NO:11;
 - (e) amino acids 1-311, 14-271, 41-213, 124-161, or 175-206 of SEQ ID NO:12;]
 - (f) amino acids 1-266, 1-261, 25-258, 101-233, 149-175, or 190-226 of SEQ ID NO:13;]
 - (g) amino acids 1-1360, 25-306, 25-258, 101-233, 149-175, or 190-226 of SEQ ID NO:14;]
- ((b))((b)) an amino acid sequence that is at least 80% identical to any of the amino acid sequences of (a) – (g) above; and
- (c) amino acids 215-247 of SEQ ID NO:11.

11 (amended). A method of designing an inhibitor of [the]a polypeptide produced according to the method of claim [10], the method comprising the steps of determining the three-dimensional structure of such polypeptide, analyzing the three-dimensional structure for the likely binding sites of substrates, synthesizing a molecule that incorporates a predicted reactive site, and determining the polypeptide-inhibiting activity of the molecule.

12 (amended). A method for identifying compounds that inhibit kinase activity comprising:

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- (a) bringing a test compound into contact with [the]a polypeptide produced according to the method of claim [10]8 and a substrate; and
- (b) determining whether the test compound inhibits the kinase activity of said polypeptide.

13 (amended). A method for identifying compounds that activate kinase activity comprising:

- (a) bringing a test compound into contact with [the]a polypeptide produced according to the method of claim [10]8 and a substrate; and
- (b) determining whether the test compound activates the kinase activity of said polypeptide.

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14. The method of claim 12 where the test compound is brought into contact with the polypeptide in a cell containing at least one recombinant vector that directs the expression of at least one polynucleotide encoding said polypeptide.

15. The method of claim 13 where the test compound is brought into contact with the polypeptide in a cell containing at least one recombinant vector that directs the expression of at least one polynucleotide encoding said polypeptide.

16 (amended). A method for inhibiting the kinase activity of [the]a polypeptide produced according to the method of claim [10]8 comprising forming a mixture of [the]said polypeptide[of claim 10], a substrate, and a compound, wherein the compound blocks the binding of [the]said polypeptide[of claim 10] with the substrate.

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NEW

17 (NEW). A recombinant host cell comprising the nucleic acid molecule of claim 1.

18 (NEW). The method of claim 12 wherein the substrate comprises an amino acid sequence selected from the group consisting of SEQ ID NOS 17-19, 24-26, 30-31, 33, and 35-36.

19 (NEW). The method of claim 13 wherein the substrate comprises an amino acid sequence selected from the group consisting of SEQ ID NOS 17-19, 24-26, 30-31, 33, and 35-36.

20 (NEW). The method of claim 16 wherein the substrate comprises an amino acid sequence selected from the group consisting of SEQ ID NOS 17-19, 24-26, 30-31, 33, and 35-36.